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DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

333 W. Nye Lane, Room 138
Carson City, Nevada 89706

October 28, 2002

Mr. Dave McCarthy
Atlantic Richfield Company
307 E Park Ave.
Anaconda, Montana 59711

SUBJECT: Draft Process Areas Work Plan

Dear Mr. McCarthy:

The Nevada Division of Environmental Protection (NDEP) has received and evaluated the **Draft Process Areas Work Plan**, dated August 26, 2002, regarding the continued environmental investigation of the Yerington Mine, located in Lyon County near Yerington Nevada. This office provides the following comments from NDEP, EPA, BLM, U.S. Fish and Wildlife and other technical representatives of the Yerington Technical Work Group (YTWG).

NDEP Comments

NDEP Specific Comments

Page 1

Comprehensive site wide health and safety plan and a Quality Assurance Project Plan must be submitted for review and approval. These reports must be reviewed and approved before work plan field work can begin.

All underground utilities and preferred migration pathways must be evaluated and sampled if warranted

The Analysis list needs to be expanded to include 8260, 8270, 8080, tph, metals, 8150 where warranted.

Page 2

Second sentence states the process components addressed in this Work Plan is located in the central portion of the mine site. There are several buildings and structures that have been left out. The main process area is in the central portion of the property. I will detail the left out facilities farther on in the comments.

There is no mention of the dump leaching process. The fluids were sent out to the dump leach on the W3 WRA and the pregnant solution was returned to the process area.

There is no mention of the acid plant. The acid plant was a major portion of the original process facilities. It is buried under the Arimetco phase II leach pad. It may be impracticable to sample the original soils since it is under 100 plus feet of leach pad, however it was significant enough that it needs to be noted. Someone reading this would never know that the facility ever existed.

There is no mention that Unison operated the transformer reclamation facility in the truck shop.

Preliminary investigation indicates that selenium was a by-product in the acid plant. Therefore, this warrants further evaluation. Note well WW10 has always had the highest selenium values.

Page 3

Last sentence is speculation. Constituents in the fluids may also have originated from the acid plant or crushed sulfide ore that was carried on a conveyor through the room in question. This room (conveyor way) has concrete walls and floor that could be retaining rain water runoff.

Page 4

1.4 Data Quality Objectives

This section should also include sub-surface assessment related to buildings (ie underground utilities and preferred pathways of contaminant migration). For example, it is likely that solvents were discharged to sanitary sewers and then leaked through cracks in piping or discharged somewhere on the mine site.

Last sentence, last paragraph page 4: “started” should be “stated”

Page 5, first paragraph: The results of field investigations must also be compared to regulatory action levels for the purpose of determining potential health effects, persistence, toxicity and potential to migrate to groundwater.

Precipitation Plant section

Add sentence each of the launderers also have numerous 8 inch diameter lead lined transfer points.

Sulfide Plant

Two underground concrete lined conveyor ways exit the ground on the west side of the plant and pass under the road to buried feed pockets on the opposite side.

Primary and secondary Crushers

There are partially buried and exposed underground concrete lined conveyor ways starting at the primary crusher and ending just south of the mega pond. The primary and secondary crusher buildings extend approximately two stories below ground level.

Petroleum Fuel Filling Stations

A gasoline filling station used to exist immediately east of the administration building. Arimetco removed the pumps in 1998. There are no records as to the status of the tanks.

Water Tank

This tank was used for fresh water for both the mine and Weed Heights.

Page 9

Wells

We believe the unnamed well is WW-23.

Facilities not listed in the section

All of the following areas must be evaluated and considered for possible soil sampling.

Just south of the privately owned bulk fueling stations is a gray metal clad building with associated pump box. This was part of Anaconda's fresh water system. Chlorine was added to the water at this location. This may be on land owned by Don Tibbals

On the southeast corner of the Phase One leach pad there are concrete foundations for a crushing plant, possibly built by Don Tibbals. There are also the remains of a lined area that once held an acid tank used by Arimetco.

Adjacent to monitor well WW8 there is a large concrete structure that appears to have been some type of pumping station.

Just east of pumpback well W-3 is a large metal clad building with associated out building and pump box. This appears to be on land owned by the Peri family. This facility looks like it was used as a pumping station for boosting or transferring fluids.

Just south east of pumpback well W-4 is a large concrete lined tank adjacent to the original Wabuska ditch. The top of the tank is at ground level and appears to have had two or more large pumps attached to it in the past. This was used as some type of pumping station.

Again there is no mention of the Anaconda acid plant. Even though it is buried it is probably significant enough to be referenced.

The main power substation and numerous smaller transformer stations show signs of oil leakage. These sites warrant soil sampling and should be addressed in the work plan.

Also buried under the south end of the Phase Two leach pad is the original Anaconda power station that consisted of three generators of one mega watt each. This should be noted for future reference.

No description of the remaining Arimetco crushing plant hopper and fine ore stockpile area. Originally the stockpile location was a lined area where strong sulfuric acid was added to the ore stream on the stacker belt. The ore was stockpiled on the lined area and allowed to acid cure. After curing the ore was moved by truck and loader to the VLT leach pad. Prior to cessation of mining operations Arimetco excavated the stockpile liner and placed it on the VLT leach pad. In Figure 5 the location noted as RR should be a proposed sample location.

On the northwest side of the Phase Two leach pad is a building listed as Tibbals storage. This building is owned by Don Tibbals and it sits on BLM land. It was once part of the Anaconda facilities and should be studied.

Page 10

Work Plan

All of the areas noted above that were left out of the original draft plan warrant inclusion in the soil investigations.

Include sanitary sewers, other underground utility trenches and preferred pathways

Page 12:

Section 3.1

How are soils to be composited? The compositing procedure should be outlined in this document and site-wide sampling and analysis plan. Also, some samples (below leaking sanitary sewers) should be discrete samples and not composited.

What are “agricultural parameters”... all sampling and analysis should reference appropriate SW-846 sample methods. For agriculture, 8150, 8080 analysis are appropriate.

Field screening procedures will not be adequate to determine potential sources of chlorinated solvents, pesticides, pcb, herbicides and metals contamination.

TV cameras in underground utility lines may be an appropriate field screening procedure for determining appropriate sampling locations to assess leakage

Page 13

Section 3.2 Quality Assurance and Quality Control

First paragraph: “*trocedures*” should be “*procedures*”.

A site-wide QA/QC plan must be reviewed and approved by regulators per sow. This document has not yet been scheduled for submittal.

QA/QC plan does not describe the compositing methods to be used

Page 14, First paragraph:

What kind of excavation equipment will be used and what are the excavation depth limits of this equipment.

Sample Handling and Transport

Page 16: other analysis is required (8260, 8270, 8080, 8150 etc). What about appropriate blanks? (trip blanks?)

3.5 Site Job Safety Analysis

We have not received a draft site safety and health plan as agreed in sow approval. This information is required and must be received not later than November 27, 2002.

Figure 4 Comments

The following areas identified in the figure may warrant analytical evaluation that is not proposed in your work plan (ie: analysis for voc, semi-voc, pesticides, pcbs, herbicides, metals etc) and may warrant other field screening methods that have not been proposed such as TV of underground utilities for the purpose of determining appropriate sample locations. Underground utility maps should be reviewed and included as figures in this workplan where appropriate. Id: C, F, J, K, L, M, N, S, U, V, W, X Y, Z, DD, EE, LL, MM. THE SAME COMMENTS APPLY TO TABLE 1

Table 4 Analysis and Methods

Add the following SW-846 Methods: 8260, 8270, 8080, 8150.

EPA General Comments

- 1) This work plan does not propose a sufficient level of investigation for this area. At best, this work plan, when corrected and improved, might serve as the basis for a screening survey of the process area with the objective being to develop a subsequent detailed work plan for this area.
- 2) The Quality Assurance and Quality Control sections are incomplete and it is our understanding that Atlantic Richfield will be submitting a comprehensive site-wide Quality Assurance Project Plan (QAPP) in accordance with EPA's guidance documents (EPA will provide these on request or they can be obtained from EPA's website). After review of the QAPP, the agencies will further comment on any supplementary Quality Assurance/Quality Control sections in the specific work plans. Please provide a date for submittal of the QAPP as this must be reviewed and approved prior to initiation of fieldwork.
- 3) Radionuclide screening and/or analyses should be proposed. At a minimum, all samples should be screened for radionuclides and a percentage of samples should be analyzed in the laboratory. Also, EPA has heard from a former Arimetco employee (other than Joe

Sawyer), that radionuclide activity has been detected around the large Anaconda leach vats.

EPA Specific Comments

- 1) Page 1; The discussion regarding exposure scenarios is incomplete. In order to provide a conservative estimate of risk for comparison, the residential exposure pathway is required to be assessed for each area. This also would give an evaluation of the risk any trespassers would encounter although every effort is underway to ensure that the Site is inaccessible. After the data is collected, it should be compared to screening values, such as EPA Region IX Preliminary Remediation Goals. At this time, the determination can be made as to the necessity of a risk assessment for a given area. There is also no discussion of the presence or absence of possible ecological receptors in the process area.
- 2) Page 1, 2nd paragraph; The text states that “...units that contain materials,...will be evaluated as to their potential to pose a risk to human health.” If an initial screening of the data indicates that there is a potential risk and that a risk assessment is required, where will this assessment be included?
- 3) Page 4; Add a DQO to identify possible interim actions.
- 4) Page 5, DQO Step 3; What historical and anecdotal sources will be used to obtain information on process facilities, construction, operations, and maintenance? This should be completed before field monitoring/sampling activities. At a minimum, Atlantic Richfield should review Anaconda and NDEP records, and attempt to interview past employees to determine their potential knowledge of historical usage and/or spills.
- 5) Page 5; The text states that additional focused investigations, if necessary, will take place prior to the Data Summary Report. It is more appropriate to complete these prior to the submittal of the Data Summary Report. One possible alternative is to have a meeting where data and potential data gaps are presented to the Technical Workgroup.
- 6) Page 6, Section 2.2, page 10; Piping from the buildings and piping outfalls must also be included in the investigation planning.
- 7) Page 9; Is anything known about the size, depth, manner of construction and current condition of the two wells? Note that since these wells may provide hydraulic connection between the shallow aquifer and deeper aquifers, they should be properly closed.
- 8) Page 10; Please clarify what is meant by the following text: “...soils that represent general conditions.” Also, areas with discolored soils should be sampled or is that what is meant by areas where solutions may have escaped containment?

- 9) Pages 10, 11; It is difficult to evaluate the workplan when there are so many different types of areas and COCs present and procedures are generalized. For example, the transformer storage areas and Unison's past operation areas should have the soils analyzed for PCB's and transformer fluids characterized to determine which transformers contain PCB's. Such activities and analyses are not described.

It is suggested that for each building/process area, a sampling approach and analyte list be prepared. Since similar areas may have similar analyte lists, the analyte lists can perhaps be presented in several tables such as inorganic, petroleum hydrocarbons, PCBs, etc.

- 10) Page 11; Field screening is not appropriate as the sole mechanism to screen samples for additional laboratory analysis. Field screening can be useful to focus an investigation once a contaminant has been verified by laboratory analyses. Please revise the sampling proposal.

Note that field screening analytical kits are available for PCBs and would be useful. The PID instrument does not provide readings in ppm. Readings are in PID units. PIDs also use several different lamps sensitive to different compounds such as benzene. PIDs will not detect non volatile organics or even volatile organics heavier than those of the specified lamp used. Thus, PID readings may indicate a material that should be analyzed, but cannot be used to screen out materials from analysis.

- 11) Pages 11-12, (and page 4); Since samples will generally not be collected at depths over one foot and since no leach testing of samples, shallow or deep, is proposed, the problem statement (page 4) regarding possible impacts to shallow groundwater is not satisfied. It will still not be known whether materials in the process areas can leach COCs to the shallow groundwater.

- 12) Page 10 - It is difficult to evaluate the workplan when there are so many different types of areas and COCs present and procedures are generalized. For example, the transformer storage areas should have the soils analyzed for PCB=s and transformer fluids characterized to determine which transformers contain PCB=s. Such activities and analyses are not described.

It is suggested that for each building/process area, a sampling approach and analyte list be prepared. Since similar areas may have similar analyte lists, the analyte lists can perhaps be presented in several tables such as inorganic, petroleum hydrocarbons, PCBs, etc.

- 13) Page 11; Field screening is not appropriate as the sole mechanism to field screen samples for additional laboratory analysis. Field screening can be useful to focus an investigation once a contaminant has been verified by laboratory analyses. Please reconsider the

sampling proposal.

Note that field screening analytical kits are available for PCBs and would be useful. The PID instrument does not provide readings in ppm. Readings are in PID units. PIDs also use several different lamps sensitive to different compounds such as benzene. PIDs will not detect non volatile organics or even volatile organics heavier than those of the specified lamp used. Thus, PID readings may indicate a material that should be analyzed, but can not be used to screen out materials from analysis.

- 14) Page 11; Other potential contaminants of concern should be analyzed. For example, in the areas that Unison operated, PCB analyses should be included.
- 15) Pages 11-12,(and page 4); Since samples will generally not be collected at depths over one foot and since no leach testing of samples, shallow or deep, is proposed, the problem statement (page 4) regarding possible impacts to shallow groundwater is not satisfied. It will still not be known whether materials in the process areas can leach COCs to the shallow groundwater.
- 16) Page 12, First Bullet; Note previous comments on use of PIDs. PIDs can not be used to screen out materials from analysis.
- 17) Page 12; How will samples at increasing depths 6, 10, 15 feet etc. be obtained?
- 18) Page 13; A pH 0-14 litmus paper will not provide a quality assurance check on the pH instrument. pH papers come in various ranges, not just 0-14. Also, there is no assurance that the paper is more accurate than the pH instrument.
- 19) Table 4; Please check your table for proposed metals and methods of analyses. At a minimum, antimony, silver, PCBs and thallium should also be included.

Accordingly, please provide the Draft Final Process Areas Work Plan which incorporates the above comments. Also, consistent with previously discussed requirements, please provide a Draft Site Safety and Health Plan and a Draft Quality Assurance Project Plan (QAPP). This information must be received not later November 27, 2002, as per approved submittal schedule.

Should you have any questions or if I can be of any assistance, please do not hesitate to contact me at (775) 687-9376 or FAX (775) 687-6396. All future correspondence regarding this subject should be addressed to the undersigned.

Sincerely,



Arthur G. Gravenstein, P.E.
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